

## OUTREACH

*National Science Teachers Association—*

# *NASA Adds “Lagniappe” to Educators’ Annual Conference*

In pursuing educational excellence, one of NASA’s Strategic Outcomes from the Vision, Mission, and Goals section of the *NASA Strategic Plan* is to involve the educational community in its endeavors to inspire America’s students, create learning opportunities, and enlighten inquisitive minds. To this end, NASA participated in the National Science Teachers’ Association (NSTA) annual national conference, held in New Orleans, Louisiana, this past April.

NASA provided lagniappe —“a little something extra for nothing”—to the overall theme of the conference, ‘guaranteeing the opportunity to learn science.’ Good times rolled in N’Awlins at the many, well-attended NASA workshops, seminars, and exhibition booths, where teachers from all grade levels were provided resource information and materials on space and Earth science.

### **Featured exhibits**

The NASA-exhibits venue featured Earth, space, microgravity, and life sciences, and aeronautics. A hands-on demonstration area introduced World Wide Web (WWW) interactive resources, such as Quest, NASA’s Classroom of the Future (COTF), and NASA’s Educational Program with links to each field center, Jet Propulsion Laboratory (JPL), and various missions/projects. Attending teachers were able to participate every half hour.

Quest is part of Learning Technologies and the Kindergarten Through Grade 12 (K-12) Internet Initiative <<http://quest.arc.nasa.gov>>. This “Internet in the Classroom” provides support and services for schools, teachers, and students on-line. Quest, managed by Ames Research Center, has won awards for its various interactive projects.

COTF <<http://www.cotf.edu/>> serves as NASA’s principal research and development center for educational technologies, providing technology-based tools and resources to K-12

schools. COTF’s philosophy is that development of products and services should be guided by the national standards of the National Council of Teachers and Mathematics and the National Academy of Science. The NSTA is currently promoting the use of nationwide standards for science curricula. Several teachers interviewed at the conference cited adoption of and adherence to such standards as a necessity in the development of resource materials and information.

At another popular booth, Spacelink, participants were taught how to connect to and navigate through NASA’s electronic educational database. Spacelink, managed by Marshall Space Flight Center, is an on-line library of NASA educational resources found at <<http://spacelink.msfc.nasa.gov>>. Spacelink provides educational services, instructional materials, NASA news and fact sheets, information on NASA projects, hot topics, and cool picks. Hot topics include a movie and photo gallery from shuttle missions, anecdotes from shuttle team members, the latest info on current missions, such as Galileo discoveries and the progress of Mars Pathfinder, etc. Cool Picks provide links to other interesting Web sites.

The Education Program booth, sponsored by NASA’s Education Division, provided literature on the many services NASA provides. Teachers received a variety of educational publications, including teachers’ guides, posters, and lithographs.

The International Space Station exhibit featured live videoconferences with Johnson Space Center’s Space Station Mock-Up and Training Facility, the Shuttle-Mir Docking Simulator, the Robotic Arm Simulator, and the Manned Maneuvering Unit fly-around (MMUF). The MMUF allowed participants to execute a fly-around of the International Space Station, viewed on a 36-inch monitor. This exhibit also offered a CD-ROM with high-



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*The goal of NASA’s many outreach programs is to promote to the general public an understanding of how NASA makes significant contributions to American education systems and to institutions dedicated to improving science literacy. This newsletter provides one vehicle for reporting how applications and hardware used for space science and other NASA research and development can be adapted for use by teachers and their students and by non-NASA organizations.*

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fidelity, full-motion graphics, and an information database.

The Office of Space Science (OSS) <<http://www.hq.nasa.gov/office/oss/>> exhibit hosted scientists and flight program managers, to answer questions about the latest space science missions to Mars, Jupiter, Saturn, the Sun, as well as Hubble Space Telescope discoveries. As part of the OSS exhibit, COTF demonstrated Astronomy Village, a multimedia program containing 10 complete investigations in astronomy. A variety of posters, activity packets, and planet lithographs were handed out.

Mission to Planet Earth (MTPE) <<http://www.hq.nasa.gov/office/mtpe/>> provided the latest news about a major initiative to understand our home planet. MTPE also gave out classroom materials, lithographs, and posters, and demonstrated Earth science imagery available on the WWW.

Other exhibitors included NASA ...On the Cutting Edge <<http://www.okstate.edu/aesp/VC.html>>, Lift Off to Learning, and the Shuttle Amateur Radio EXperiment (SAREX) <<http://www.arrl.org/>>. On the Cutting Edge provided literature on NASA's educational television programming available on the Web. Lift Off to Learning, available via Spacelink, provided its resource guide to video tape and other instructional materials. SAREX, a program that partners with NASA, uses amateur radio equipment on board the space shuttle and Mir Space Station to involve classrooms in the space program.

### ***Seminars and workshops***

The NASA Origins Program <<http://origins.stsci.edu/>> Director, Ed Weiler, was a featured speaker on the opening day of the conference. In his talk, *How Did We Get Here?*, Weiler said, "Astronomers approach this fundamental question by looking far away, back toward the beginning of time to see galaxies forming, or by looking close to home, searching for planetary systems like our own around nearby stars. ...NASA's Origins Program will help answer [our] questions."

Throughout the five day conference NASA conducted seminars, discussions, and workshops, many with hands-on activities. Instructional short courses on Web navigation proved popular.

Telescopes in Education (TIE) <[http://encke.jpl.nasa.gov/TIE/TIE\\_index.html](http://encke.jpl.nasa.gov/TIE/TIE_index.html)>, a project developed and supported by JPL,

presented a workshop on "Remote Astronomy from the Classroom." The TIE project involves students in hands-on astronomy and research utilizing a science-grade 24-inch reflecting telescope located at the Mount Wilson Observatory in Los Angeles, California.

MTPE held a teacher inservice for on-line Earth system science, utilizing COTF. This session introduced teachers to course content, technology, and methodology.

The Spaceborne Imaging Radar-C Educational CD-ROM was introduced in a workshop given jointly by JPL and a La Crescenta, California, high school teacher. This CD-ROM contains a teacher's guide, lesson plans, and science data collected from Earth orbit during two shuttle missions, was demonstrated.

One of the KidSat project's <<http://www.jpl.nasa.gov/kidsat/>> participating schools demonstrated how students communicate through the Internet with a shuttle digital camera to take pictures of the Earth. The students then retrieve the pictures and apply them to Earth science classes.

Johnson Space Center demonstrated the challenges and difficulties of robot space exploration. This focused particularly on planetary exploration.

Other agencies partially funded by or partnered with NASA participated in the conference: the National Science Foundation <<http://www.nsf.gov/>>, the US Geological Society <<http://www.usgs.gov/>>, the National Oceanic and Atmospheric Association <<http://www.noaa.gov/>>, the Global Learning and Observations to Benefit the Earth Program <<http://www.globe.gov/>>, the US Space and Rocket Center <<http://spacecamp.com/>>, the Space Telescope Science Institute <<http://www.stsci.edu/>>, the Planetary Society, <<http://planetary.org/>> the Lunar and Planetary Institute <<http://cass.jsc.nasa.gov/lpi.html>>, the Army, and the Navy.

### ***About NSTA***

The NSTA <<http://www.nsta.org/>>, founded in 1944 and headquartered in Arlington, Virginia, is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning for all. NSTA's current membership of more than 53,000 includes teachers and administrators, scientists, business and industry representatives, and others involved in science education.